Finding of No Significant Impact

December 2002

Wildland-Urban Interface Fuels Management

ROCKY MOUNTAIN

National Park · Colorado

FINDING OF NO SIGNIFICANT IMPACT

WILDLAND-URBAN INTERFACE FUELS MANAGEMENT PROJECT

ROCKY MOUNTAIN NATIONAL PARK

Rocky Mountain National Park is located in north-central Colorado in portions of Larimer, Boulder, and Grand counties. The park is administered by the National Park Service, includes 265,769 acres, and had 3,213,029 visitors in 2001. The park features an exceptionally scenic portion of the Central Rocky Mountains. The Continental Divide bisects the park north to south, dividing the park into east and west subunits. The east receives about 15 inches of precipitation annually and features both dry and wet grasslands; montane, lodgepole pine, and spruce-fir forests; and alpine tundra. The west subunit has higher average elevations, receives more moisture, and montane forests are typically lacking (NPS 1992). The towns of Allenspark, Glen Haven, Estes Park, and Grand Lake are found along the park borders.

During much of the 20th century, total fire suppression on public lands was viewed as the most appropriate method to prevent widespread wildland fires. However, after decades of fire suppression, it became obvious that complete exclusion of fire did not promote ecosystem health. In fire-adapted systems, fuels accumulated that increased fire risk and had detrimental impacts on native flora and fauna. Increased combustible fuels near archeological sites posed a high risk to ancient resources on public lands. Following intense fire seasons in 1988 and 1994, fire management policies for public lands were reviewed and updated. In 1995, the role of fire was reconsidered, and prescribed burns were re-introduced as a management tool on National Park Service lands. Reductions of fuel loads were planned to facilitate the control of wildfire. Current federal policy reinforces the protection of human life and property as an overriding principle in wildland fire management. Other guiding principles include protecting natural ecological systems and safeguarding cultural and natural resources.

A contributing factor to the amount of damage resulting from wildland fires has been the growth of communities in areas adjacent to public lands. Such development puts human life, homes, and other property at risk. Wildland-urban interface projects are intended to reduce the fire hazard in areas where developed areas join wildlands.

Periodic wildland fire, ignited by lightning and by native Americans, has been a big influence in the development and perpetuation of ecosystems in the northern Front Range of Colorado prior to the arrival of European settlers to the area. These fire regimes shaped the ecological landscape, including the area that in 1915 was designated as Rocky Mountain National Park. The historic record demonstrates the capability of the region to support large, occasional fires and that fire in some form has had a continual presence in the park. Organized fire suppression in the park began about 1929, which reduced the frequency and size of fires. Based on fire records, the park experiences an average of four natural fires a year. Large fires have been infrequent, due in part to prompt and effective suppression efforts. The purpose of wildland-urban interface fuels management at Rocky Mountain National Park is to protect and preserve the natural and cultural resources of the park for the enjoyment of present and future generations. This includes perpetuation of the ecosystem in which these resources occur. Wildland-urban interface fuels management also is intended to protect human life and property, both public and private, within and adjacent to National Park Service (NPS) lands.

This wildland-urban interface fuels management project would be consistent with the Rocky Mountain National Park master plan (NPS 1976), fire management plan (NPS 1992), resources management plan (NPS 1998), and the backcountry/wilderness management plan (NPS 2001). These documents provide the broad guidance within which the proposed action would function.

PREFERRED ALTERNATIVE

The preferred alternative, Alternative B, would provide for reduction of fuel loads in targeted areas along the wildland-urban interface, as well as around park developments and important cultural and natural resources. Seven areas in the wildland urban interface would receive treatment. The treatments would include an adaptive and integrated program of wildland fire suppression, mechanical thinning of vegetation, and prescribed fire in project areas as deemed appropriate given slope, aspect, vegetation type and structure, and proximity to developed areas and other sensitive sites.

Seven treatment areas, totaling 3,670 acres, have been targeted for fuel reduction along the eastern border of the park: 189 acres in the Cow Creek area, 2,436 acres in the Deer Mountain area, 576 acres in the Eagle Cliff Mountain area, 192 acres in the Emerald Mountain area, 125 acres in the Lily Lake area, 25 acres in the area of the Longs Peak Ranger Station, and 127 acres in the Copeland Moraine area.

Thinning would be accomplished using hand tools and chainsaws. The method of disposal/removal of mechanically thinned vegetation along the park boundary would vary according to the amount of live canopy and woody material present prior to treatment. When a limited amount of small sized material is collected, the material would be scattered in a manner that would not be easily visible and would not contribute to fire intensity should a fire occur. Larger amounts of slash material would be stacked into piles and burned in open areas.

Large diameter woody debris (greater than 3 inches) would be either stacked into piles and burned along with slash material or removed from the site and used for park projects, put up for bid as firewood, or used as a goods-for-services payment for the treatment work. Access into project areas and the ease of wood removal will dictate the feasibility of utilizing project material. A prescribed fire plan would be prepared for any slash pile or prescribed burning in the treatment areas.

Within the treatment areas, there would be a reduced probability that a wildfire, if ignited, would migrate across the park boundary. In addition, the reduced volume of fuels in the treatment area would reduce the intensity of a fire that originated outside of the treatment area boundary and could improve firefighters' ability to gain control of a wildfire.

ALTERNATIVES CONSIDERED

In addition to the preferred alternative described above, the environmental assessment also analyzed a no action alternative, Alternative A.

Alternative A (the No-Action Alternative) would continue the park's current fire management practices as identified in the 1992 Fire Management Plan and Environmental Assessment. This alternative assumes that fuels in the treatment areas identified in this Environmental Assessment would continue to build up. Fuel treatments in the park would be restricted to only the limited areas identified in the 1992 Fire Management Plan and Environmental Assessment. At some point an ignition from a natural or human-caused source would result in a wildland fire. Under most conditions, surface fires that consume surface plant cover and portions of the understory and midstory would be expected. However, under drought conditions and/or high wind speeds, a running crown fire that destroyed the overstory could result.

Mitigation measures and best management practices to be employed during implementation of any of the alternatives are described in the environmental assessment.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is determined by applying the criteria in the National Environmental Policy Act of 1969 (NEPA), which is guided by the Council on Environmental Quality (CEQ). The environmentally preferred alternative is the alternative that will promote the national environmental policy as expressed in NEPA's Section 101:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.
- Ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.
- Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.
- Preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice.
- Achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The preferred alternative, Alternative B, was identified as the environmentally preferred alternative because it would:

- Reduce fuel loadings to a level that would enhance the protection of resources for succeeding generations.
- Reduce the risk to health and safety and other undesirable consequences of a catastrophic wildfire.
- Restore dominance of fire-adapted plant communities.
- Provide better protection of cultural resources.
- Restore natural processes to the degree possible, as described in the park's Final Master Plan (NPS 1976), by creating defensible space in high risk areas along the park boundary so that more areas of the park can be managed to allow wildland fire for prescribed fire and resource benefit.

Therefore, the preferred alternative (Alternative B) would be environmentally preferable over the continue current management/no action alternative (Alternative A).

WHY THE PREFERRED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT

As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

Impacts that may be both beneficial and adverse: Mechanical thinning treatments would have negligible to minor adverse local effects on soils and vegetation resulting from erosion and loss of individual plants. Erosions of soils and loss of vegetation would result in minor adverse affects on water quality and wetlands. Prescribed burning would potentially affect a greater area and may increase the short-term adverse impacts on these resources to a moderate level. Prescribed burning would result in adverse minor to moderate impacts on air quality. Short-term minor adverse impacts to wilderness may occur from management activities occurring in adjacent areas. Wildlife would likely avoid areas during treatment, and mitigation measures to protect breeding wildlife would reduce adverse impacts to minor. Disturbance to cultural

resources from management activities would be avoided by excluding eligible or potentially eligible cultural resources from the project area. Negligible to minor adverse effects would result to the local economy and visitor use and experience as a result of effects to tourism during management activities. Potential minor adverse effects to public health and safety related to prescribed burning and slash-pile burning may also occur.

Long-term beneficial effects of the preferred alternative would occur as a result of the reduction of wildfire risk. Negligible to minor benefits to air quality would occur by reducing the potential for smoke and particulate pollution. Soils would benefit from release of nutrients during slash burning and prescribed burning. Minor to moderate benefits to vegetation would accrue by reducing potential for destructive fire. The benefits to wetlands would be minor from nutrient release, mineral cycling, and native plant development. Minor benefits to local wildlife would occur by avoiding displacement or loss of habitat from wildfire and minor benefits for some wildlife following prescribed fire. Cultural resources would benefit by making them less vulnerable to future fires. Local economic benefits would occur as the risk of migrating wildfire is reduced. Decreasing the potential for a wildfire would have moderate benefits on park operations from the reduced demands on park staff and resources to suppress wildfires. Public health and safety would be moderately improved as a result of the increased protection from wildfire migration across park boundaries. The reduced chance of wildfire would also represent a beneficial effect on visitor use and experience.

Degree of effect on public health or safety: Public health and safety is an important issue for the wildland-urban interface fuels reduction project. By reducing the potential for migrating wildfire, protection of life and property would be enhanced. The treatment activities would pose no threat to visitors, adjacent residents, or staff. The long-term effect of the preferred alternative would be beneficial and range from minor to moderate by reducing the potential for smoke and particulate emission and limiting the spread of wildfire across park boundaries.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas: As described in the environmental assessment, cultural resource surveys will identify and allow the park to protect cultural resources that are eligible for or potentially eligible for inclusion on the National Register of Historic Places. Therefore, there will by no adverse effect, but possibly a beneficial effect to eligible cultural resources in the project areas. If any previously undiscovered cultural resources are observed during project implementation, a cultural resource specialist from the park will be called immediately, and work will cease in the vicinity of that cultural resource until the cultural resource specialist is able to make a determination of eligibility in cooperation with the Colorado State Historic Preservation Office. Several mitigation measures to protect cultural resources would be employed during project implementation and are described in the environmental assessment.

Wetlands would be avoided during treatment and are protected under current management direction. There are no prime farmlands, wild and scenic rivers, or ecologically critical areas within the treatment areas, and these resources would not be affected.

Degree to which effects on the quality of the human environment are likely to be highly controversial: The preferred alternative's overall effects on the human environment would be beneficial as a result of the reduction in wildfire risk and thus not likely to be controversial. The proposed treatment would not have a significant adverse affect on key resources or values at Rocky Mountain National Park.

As part of the initial scoping process, the National Park Service sent letters regarding the wildland-urban interface project to the public and to government agencies. The issues and concerns identified as a result of the scoping effort were addressed in the environmental assessment. Implementation of the preferred alternative would be unlikely to generate any effects on the human environment that would be highly controversial.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks: As previously described, the risks to the quality of the human environment associated with the preferred alternative would be negligible to minor. There were no highly uncertain, unique, or unknown risks identified.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration: The preferred alternative neither establishes a National Park Service precedent for future actions with significant effects nor represents a decision in principle about a future consideration.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts: Implementation of fuels reduction at the wildland-urban interface would not have a significant cumulative impact on the resources or values of Rocky Mountain National Park. The negligible to minor adverse effects related to the preferred alternative, in conjunction with the adverse impacts of any other past, present, or reasonably foreseeable future actions would result in negligible or minor impacts to air quality, water quality, wilderness, and cultural resources.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources: No known district, site, structure, or object listed on the National Register of Historic Places would be adversely affected, as defined in 36 CFR 800, by the proposed action. As described in the environmental assessment, compliance with Section 106 of the National Historic Preservation Act has been initiated. Section 106 compliance is project specific and would be completed prior to project implementation. Project-specific cultural resource surveys were completed during the summer of 2002. Before implementation of the preferred alternative, the results of the completed cultural resource surveys would be reviewed, and newly identified resources would be evaluated for National Register eligibility in consultation with the Colorado State Historic Preservation Office. With mitigating measures (including avoidance) as described in the environmental assessment and developed in consultation with the Colorado State Historic Preservation Office and concerned American Indian tribes, no adverse effects would occur to properties currently listed in or eligible for the National Register of Historic Places. The Colorado State Historic Preservation Office concurred with the plan to complete Section 106 consultation as proposed in the environmental assessment on December 17, 2002. In addition, implementation of the preferred alternative would yield long-term beneficial effects to cultural and ethnographic resources as the potential for destructive wildfire is reduced. A full description of the potential effects on cultural and ethnographic resources is included in the environmental assessment.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat: The proposed action would not have an adverse effect on any federal or state-listed endangered, threatened, proposed, or candidate species, or any state species of special concern, or any designated critical habitats. The U. S. Fish and Wildlife Service concurred with this opinion. Refer to Appendices C and D of the environmental assessment for lists of species and the references used by the National Park Service to identify those species, respectively.

Whether the action threatens a violation of federal, state, or local environmental protection law: The preferred alternative would not violate federal, state, or local environmental protection laws.

Impairment: In addition to reviewing the list of significance criteria, the National Park Service has determined that implementation of the proposed action would not constitute an impairment to Rocky Mountain National Park's resources and values. This conclusion is based on a thorough analysis of the environmental impacts described in the Wildland-Urban Interface Fuels Management Environmental Assessment, the public comments received, relevant scientific studies, and the professional judgment of the decision-maker guided by NPS Management Policies. Although the plan/project would have some adverse impacts, in all cases these adverse impacts are the result of actions taken to preserve and restore other park resources and values. Overall, the proposed action would result in benefits to park resources and values, opportunities for their enjoyment, and it would not result in their impairment.

PUBLIC INVOLVEMENT

Prior to preparation of the environmental assessment, the National Park Service sent letters regarding the wildland-urban interface project to neighboring landowners, various organizations, and to government agencies, including the Colorado State Historic Preservation Office and the U.S. Fish and Wildlife Service. Rocky Mountain National Park issued notification on October 17, 2001 that public "open house" meetings would be held to address the Wildland-Urban Interface Fuel Reduction Project. Four meetings were held in neighboring communities in November of 2001. Approximately 50 individuals made contact with park staff regarding the proposed action. One open house was held for members of the Resort Chamber Association, which resulted in an additional 30 contacts. Six additional contacts were made outside these meetings. A total of 83 public scoping contacts were made with 27 written comments received. These comments were considered in the development of the environmental assessment.

The Northern Ute, Northern Arapaho, and Jicarilla Apache tribes have demonstrated interest in the areas of Rocky Mountain National Park that are covered by this environmental assessment. In accordance with the National Historic Preservation Act, these tribes were contacted by the park prior to development of the environmental assessment to ensure tribal concerns were considered. As a result of the initial public scoping, the National Park Service changed the proposed treatment areas to exclude all wilderness areas. As a result, scoping was reinitiated with the U.S. Fish and Wildlife Service and the Colorado State Historic Preservation Office.

Copies of consultation letters are included in the environmental assessment and the Consultation and Coordination section includes a list of recipients and the agencies contacted. Substantive comments and changes to the environmental assessment as a result of consultation with agencies and public comments are addressed in errata sheets attached to this Finding of No Significant Impact (FONSI). A copy of this document and the errata sheets will be sent to all respondents.

The environmental assessment was made available for public review and comment during a 30-day period ending September 20, 2002. Eleven comments were received. A general summary of the comments includes the following points, questions and/or concerns:

- One letter, from a consortium of six organizations, presented wide-ranging concerns.
- Concern about timing of implementation and requests for notification when treatments are to occur, especially prescribed burns.
- Questions regarding treatment of private lands.
- Concern that persons owning inholdings were not contacted during initial scoping.
- Advice regarding the wind and potential effects in the Copeland Moraine treatment area.
- A request to know the exact perimeters of the treatment areas.
- Support of the environmental assessment's preferred alternative.

Refer to the Errata on the following pages for clarifications to the environmental assessment as a result of consideration of these public comments and for responses to the comments received.

REFERENCES

National Park Service (NPS)

1976 *Final Master Plan for Rocky Mountain National Park*. Denver Service Center, Denver, CO.

1992 *Fire Management Plan and Environmental Assessment*. Rocky Mountain National Park, Colorado.

1998 *Rocky Mountain National Park Resources Management Plan*. Rocky Mountain National Park, Estes Park, Colorado.

2001 *Backcountry/Wilderness Management Plan and Environmental Assessment*. Rocky Mountain National Park, Colorado.

Skinner, T. and R. Laven.

1987 Background Data for Natural Fire Management in Rocky Mountain National Park, Final Report. Department of Forest and Wood Sciences, Colorado State University. Unpublished. 16pp.

CONCLUSION

The preferred alternative would not constitute an action that normally requires preparation of an environmental impact statement. The preferred alternative would not have a significant effect on the human environment. Adverse environmental effects that could occur are negligible to moderate in intensity. There would be no significant adverse effects on public health, public safety, threatened or endangered species, sites or districts listed in or eligible for listing in the National Register of Historic Places, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative adverse effects, or elements of precedence were identified. Implementation of the action would not violate any federal, state, or local environmental protection law.

Based on the foregoing, it has been determined that the preparation of an environmental impact statement is not required for this project and thus, an environmental impact statement will not be prepared.

Recommended: Vaughn Baker — Superintendent — 12-31-02 — Date

Approved: Karen P. Wade — Intermountain Regional Director — 1/14/03 — Date

Errata and Response to Comments

Environmental Assessment/Assessment of Effect

Wildland-Urban Interface Fuels Management

Rocky Mountain National Park

1) Comments from a consortium of organizations:

A September 20, 2002 letter received from Mr. Ted Zukoski at the LAW Fund, representing the Wilderness Society, Sierra Club, Colorado Mountain Club, Land and Water Fund of the Rockies, Colorado Wild, and American Lands Alliance, cited numerous concerns. These concerns, NPS responses, and, in some cases, edits to the environmental assessment, are enumerated below.

1a) Comment: The letter implies that the environmental assessment is inadequate in the following text.

> "The EA for this project is perhaps the least informative environmental document we have ever reviewed. It contains virtually no information about the area affected, the nature of the treatment, or the likely effects of the project. It simply cannot provide the basis for informed decision making…the EA fails to provide adequate information for a substantive review. The many information gaps suggest that the Park Service has not conducted scientific analyses of the impacts of logging, the reality of complex fire behavior, risks associated with the proposed project, economic and financial impacts, and monitoring needs…nowhere are costs and benefits addressed comprehensively. The Park Service must produce a revised and more detailed Environmental Assessment for this proposed action, in which the requisite analyses are presented to the public."

1a) NPS Response: The term "logging" infers the removal of trees for commercial use. The proposed action does not involve any logging. The areas that would be affected are described on pages 4-13 of the environmental assessment; the nature of the treatment is described on pages 28-35 (with additions that are detailed in the response to comment # 1b below) and the potential effects are evaluated throughout the Environmental Consequences section. Economic impacts of the proposed action are evaluated in the environmental assessment on page 82. According to NPS *Director's Order #12, Conservation Planning, Environmental Impact Analysis, and Decision-making Handbook*, Section 5.4 D.4, a cost-benefit analysis is required if it would be used in making decisions between alternatives. Because decisions between alternatives were made based on the intensity of the potential environmental impacts, the proposed action would not generate revenue, and the costs and benefits between alternatives would be inconsequential to the proposed action's purpose, it was determined that a cost-benefit analysis would not be included in the assessment.

1b) Comment: The letter states that information on current stand condition and the effects of proposed treatments are lacking and that the environmental assessment does not include enough information regarding structure of stands in proposed treatment areas.

> "…the proposed project: 1) plans to cut 3670 acres (5.7 square miles) within a national park, but provides no map or data indicating the condition of the forest. 2) aims to affect fire behavior across a landscape by 'limit[ing] the risk of fire migrating across park boundaries'…but provides no analysis of current fuel structure or effects of proposed treatment on future fire behavior."

> "…the EA is marred by insufficient documentation of the size class structure of the project area. Any subsequently prepared NEPA document must disclose existing diameter class structure for

sites proposed for treatment, and it should include quantitative assessments demonstrating how the treatment will change those distributions."

1b) NPS Response: Comment 1b implies that the treatment areas will be clear-cut, which is not the case. Much of the acreage to be treated under the proposed action will receive minimal treatment consisting of limbing of trees and removal of dead and downed material. Maps of the proposed project area are presented on pages 6-13. Descriptions of the treatments are presented on pages 28-35.

As mentioned previously, the intent of the proposed action is not timber harvest. The environmental assessment states (on page 28, second bullet; page 29, second bullet) "[t]rees to be thinned will be less than 8-inch diameter at breast height (DBH), unless tree densities require larger trees to be removed." This statement is revised to delete the phrase "unless tree densities require larger trees to be removed." Thus, no trees larger than 8-inches DBH would be removed. The comment implies that large trees (> 8-inch DBH) are underrepresented due to past management actions. Rocky Mountain National Park is not managed for timber production and has not been previously logged. Therefore the suggestion that these large trees are underrepresented due to past management is not valid. The proposed action is not commercial in nature, therefore there will be no incentive to cut large trees. The purpose of the proposed action is hazard fuel reduction, not restoration.

Current stand condition, effects of the proposed treatments, and the structure of stands can be better understood with the following addition. This information is presented to better explain the proposed treatments and the desired results of implementing those treatments. Insert the following text, tables, and references (***Insert 1***) after the end of the first paragraph on page 32 in the environmental assessment.

****

Insert 1

Table 2a presents information regarding the vegetation types, fire regimes, condition classes, and the current and desired fuel models for each of the proposed treatment areas. Details regarding fire regimes, condition classes, and fuel models are also provided in the text and in Tables 2b and 2c to aid in understanding the characteristics and desired condition for the proposed treatment areas.

Table 2a: Project Area Characteristics

Vegetation Type	Acres	Percent of Project Area	Fire Regime Type	Condition Class	Current Fuel Model(s)	Desired Fuel Model(s)
Cow Creek Project Area						
Lodgepole pine	0	0	IV	1,2	8,10	8
Mixed conifer	91	49	III	2	10	8
Ponderosa pine	47	25	I	2,3	2,9	1,9
Shrub/grassland	29	15	II	2	5	1,2
Other	22	11	N/A	N/A	N/A	N/A

Vegetation Type	Acres	Percent of Project Area	Fire Regime Type	Condition Class	Current Fuel Model(s)	Desired Fuel Model(s)
Deer Mountain Project Area						
Lodgepole pine	527	22	IV	1,2	8,10	8
Mixed conifer	664	27	III	2	10	8
Ponderosa pine	843	35	I	2,3	2,9	1,9
Shrub/grassland	349	14	II	2	5	1,2
Other	53	2	N/A	N/A	N/A	N/A
Eagle Cliff Mountain Project Area						
Lodgepole pine	17	3	IV	1,2	8,10	8
Mixed conifer	127	22	III	2	10	8
Ponderosa pine	260	45	I	2,3	2,9	1,9
Shrub/grassland	168	29	II	2	5	1,2
Other	4	1	N/A	N/A	N/A	N/A
Emerald Mountain Project Area						
Lodgepole pine	113	59	IV	1,2	8,10	8
Mixed conifer	6	3	III	2	10	8
Ponderosa pine	31	16	I	2,3	2,9	1,9
Shrub/grassland	42	22	II	2	5	1,2
Other	0	0	N/A	N/A	N/A	N/A
Lily Lake Project Area						
Lodgepole pine	44.5	36	IV	1,2	8,10	8
Mixed conifer	35	28	III	2	10	8
Ponderosa pine	38	30	I	2,3	2,9	1,9
Shrub/grassland	4	3	II	2	5	1,2
Other	4	3	N/A	N/A	N/A	N/A
Longs Peak Project Area						
Lodgepole pine	16	64	IV	1,2	8,10	8
Mixed conifer	0	0	III	2	10	8
Ponderosa pine	0	0	I	2,3	2,9	1,9
Shrub/grassland	0	0	II	2	5	1,2
Other (spruce/fir)	9	36	N/A	N/A	N/A	N/A

Vegetation Type	Acres	Percent of Project Area	Fire Regime Type	Condition Class	Current Fuel Model(s)	Desired Fuel Model(s)
Copeland Moraine Project Area						
Lodgepole pine	13	11	IV	1,2	8,10	8
Mixed conifer	96	75	III	2	10	8
Ponderosa pine	5	4	I	2,3	2,9	1,9
Shrub/grassland	0	0	II	2	5	1,2
Other	13	10	N/A	N/A	N/A	N/A

FIRE REGIMES

The fire regime concept is used to characterize the traits of a fire in a given vegetation type; namely, how often it visits the landscape, the type of pattern created, and the ecological effects. The following natural fire regimes are arranged along a temporal gradient, from the most frequent to the least frequent fire return interval. Fire regimes I, II, III, and IV are represented in the Rocky Mountain National Park proposed fuel management areas.

Table 2b: Fire Regime Characteristics

Fire Regime	Fire Frequency	Fire Effect To Dominant Aboveground Vegetation	Representative Ecosystem Affected
I	0-35 years	Low severity	Dry pine and oak forests, Pinyon-juniper forests
II	0-35 years	Stand replacement	Grasslands, many shrub communities
III	35-100+ years	Mixed severity	Shrublands, mixed conifer forests
IV	35-100+ years	Stand replacement	Certain lodgepole pine, dry Douglas-fir forests
V	200+ years	Stand replacement	High elevation whitebark pine, spruce-fir, and Pacific coastal forests

CONDITION CLASS

The condition class concept has been recently described by forest scientists and is based upon the “relative risk of losing key ecosystem components.” In certain cases, condition classes can be assigned when ecosystems have crossed ecological thresholds. For the purposes of condition class description, ecological risks are determined by contrasting current with historical conditions. Condition classes are then described qualitatively in terms of alteration from the historical range and risks associated with those departures.

The condition class concept helps describe alterations in key ecosystem components such as species composition, structural stage, stand age, canopy closure, and fuel loadings. These alterations may be caused by fire suppression, timber harvest, livestock grazing, exotic plant species, insects/disease, and other disturbances or variations from the natural, historical condition.

The Condition Class definitions presented below are synthesized from Cohesive Fuels Strategy (USDA Forest Service 2002) and Coarse-Scale Spatial Data for Wildland Fire and Fuel Management (Schmidt et al. 2002).

The proposed treatment areas within Rocky Mountain National Park include each of the three condition classes, with CC2 most common, as it is found in each vegetative community in all of the treatment areas.

CONDITION CLASS DEFINITIONS

Condition Class 1 (CC1): Fire regimes are within a historical range, and the risk of losing key ecosystem components is low. Vegetation attributes (species composition and structure) are intact and functioning within a historical range. Fires burning in CC1 lands pose little risk to the ecosystem and have positive effects to biodiversity, soil productivity, and hydrologic processes.

Example of typical management: Historical fire regime is replicated through periodic application of prescribed fire or through fire use.

Condition Class 2 (CC2): Fire regimes have been moderately altered from their historical range. The risk of losing key ecosystem components is moderate. Fire frequencies have departed from historical frequencies by one or more return intervals (either increased or decreased). This results in moderate changes to one or more of the following: fire size, intensity and severity, and landscape patterns. Vegetation attributes have been moderately altered from their historical range. Wildland fires burning in CC2 lands can have moderately negative impacts to species composition, soil conditions, and hydrological processes.

Example of typical management: Moderate levels of restoration treatments are required, such as a combination of prescribed fire with mechanical/hand treatment.

Condition Class 3 (CC3): Fire regimes have been significantly altered from their historical range. The risk of losing key ecosystem components is high. Fire frequencies have departed from historical frequencies by multiple return intervals. This results in dramatic changes to one or more of the following: fire size, intensity, severity, and landscape patterns. Vegetation attributes have been significantly altered from their historical range. Wildland fires burning in CC3 lands may eliminate desired ecosystem components, exacerbate the spread of unwanted non-native species, and result in dramatically different ecological effects compared to reference conditions.

Example of typical management: High levels of restoration treatments, such as mechanical treatments, are required before fire can be used to restore desired ecosystem function. Intensive efforts, which may include seeding, herbicide application, biomass removal, and other types of rehabilitation, are required for CC3 lands (note that no herbicide applications are associated with the proposed actions in Rocky Mountain National Park).

FUEL MODEL DEFINITIONS

Fuel models have been formulated in order to form a quantitative basis for predicting fire behavior. The 13 fuel models for fire behavior estimation have been identified for the severe period of the fire season when wildland fires pose greater control problems and can critically affect resources. Each fuel model is described by fuel load and the ratio of surface area to volume for each size class; the depth of the fuel bed involved in the fire front; and fuel moisture, including the moisture content level that at which the fire will not spread, called the moisture of

extinction. The fuel models within the Rocky Mountain National Park proposed treatment areas, both presently and as the desired condition following implementation of fuels reductions, are 1, 2, 5, 8, 9, and 10. The implementation of fuels management would result in reduced fuel loads (e.g., a reduction of greater than 50 percent where current areas with fuel model 10 are treated to achieve fuel model 8) and thinner fuel beds (e.g., model 10 with a fuel bed depth of 1 foot would be reduced to a fuel bed of 0.2 feet under fuel model 8) in the treatment areas.

Table 2c. Fuel Model Definitions

Fuel Model	Description	Fuel Load (tons/acre)	Fuel Bed Depth (ft)	Moisture of Extinction (%)
1	Short grass	0.74	1.0	12
2	Grass with timber and brush	4.00	1.0	15
5	Brush (<2' tall)	3.50	2.0	20
8	Short needle litter	5.00	0.2	30
9	Long needle litter	3.48	0.2	25
10	Heavy timber with understory	12.02	1.0	25

References:

Schmidt, K. M., J. P. Menakis, C. C. Hardy, W. H. Hann, and D. L.. Bunnell. 2002. *Development of Coarse-Scale Spatial Data for Wildland Fire and Fuel Management*. Rocky Mountain Research Station, General Technical Report GTR-RMRS-87. 41 p.

USDA Forest Service. 2002. *Restoring Fire-Adapted Ecosystems On Federal Lands: A Cohesive Fuel Treatment Strategy For Protection People And Sustaining Natural Resources.*

End of Insert 1

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1c) Comment: The letter expresses a concern about lack of fire risk analysis.

> "The EA fails to discuss or spatially analyze fire danger. This major shortcoming draws into question whether the proposed actions will actually reduce fire danger…A spatial analysis is needed in order to examine the risks of the proposed action on public safety…The EA also fails to model fire behavior in order to assess fire risks…The effect of the proposed treatment could be quantified using a spatially explicit fire simulator (such as FARSITE), but no attempt was made to analyze treatment effects. Therefore, there is no basis for the conclusion that treatment will have any effect, and a decision cannot be reached."

1c) NPS Response: The use of a spatially explicit fire simulator to assess the effects of the proposed actions would not be appropriate for a thinning project such as the proposed wildland urban interface fuels management project because the effects can be identified through the use of simpler techniques such as desired fuel models. The effects of the treatments can be seen in the differences in the current and desired fuel model indices presented in Table 2a.

1d) Comment: The letter states that the environmental assessment focuses on the negative aspects of fire.

"The EA also states the negative effects of fires on soils, but fails to disclose their positive effects, especially in nutrient cycling…In general, the depiction of fire in the EA is that it almost exclusively has a negative effect on the ecosystem, and the use of fire is strictly to reduce fuels. The EA ignores other positive functions and uses of fire."

1d) NPS Response: The effects of high-intensity wildfire would have more severe and long-lasting effects on soils (e.g., soil sterilization, consumption of seed stored in soil, root mortality, hydrophobicity, decreased porosity, increased volatilization of soil nutrients) than low-intensity fire. The environmental assessment states the beneficial effects of low intensity wildfire and prescribed fire on soils in multiple sections (see pages 38, 39, 57, 58, 66). The intention of the proposed action is hazard fuel reduction, not habitat restoration. Therefore, the intent of using fire under the proposed action is first and foremost to reduce fuels. Completion of the proposed hazard fuel reduction treatments would provide an increased margin of safety and therefore more opportunities and greater flexibility to use prescribed fire for ecological benefit in the future.

1e) Comment: The letter is concerned about slash production as result of proposed action.

"The EA fails to examine the impact of the proposed action on fuel loading and fire behavior. The EA indicates that slash will be generated but it provides no analysis of how much… Presumably the park has inventory data that could be used to determine biomass loadings and the amount of material that would be produced by the prescriptions described on pages 28 and 29, but no such analysis was conducted."

1e) NPS Response: Slash would be removed from the treatment areas either by burning in piles or by physically transporting it out of the areas. No slash would be left in the treatment areas; the goal of the proposed action is to reduce fuel loads, not add to them. Refer to Table 2c in the response to Comment 2 for impacts of the proposed action on fuel loading and fire behavior.

1f) Comment: Concerned about proximity of treatment areas to values at risk.

"…the EA utterly fails to demonstrate that the treatment areas are anywhere near the wildland-urban interface…Are these areas near structures that need protection? Have treatments been implemented outside the Park that will assure that Park treatments will be effective? Without answers to these questions, the soundness of the proposal cannot be judged and the Park Service must admit to arbitrary and capricious decision making in the selection of the preferred alternative."

1f) NPS Response: The wildland-urban interface is present in many areas along the park's eastern boundary where the treatments are proposed. The National Park Service cannot direct the actions taken by others on lands outside the park, although efforts concerning education about the need for fire fuels management are described on pages 16, 58 and 72. Figure 1, on page 6, shows the proximity of the treatment areas to values at risk from wildfire, including, but not limited to, the Fall River Visitor Center, Estes Park, the YMCA, Meeker Park, and Allenspark. The following text is added to the environmental assessment as ***Insert 2***, following the description of the Copeland Moraine treatment area on page 5 in the Description of the Project Area section.

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Insert 2

The need for a reduction in hazard fuels is highlighted by the continuing proliferation of development in proximity to Rocky Mountain National Park. There are 458 privately owned

parcels of land within 1/4 mile of the seven proposed treatment areas, the majority of which are developed with private homes, seasonal cabins, and rental accommodations. The YMCA of the Rockies, adjacent to the Emerald Mountain Project Area, is the largest YMCA facility in the world and hosts as many as 4,000 overnight guests in the summer. NPS facilities that would be better protected as a result of implementation of the proposed action include the Beaver Meadows Visitor Center, the Lily Lake Visitor Center, the Mill Creek, Longs Peak and Wild Basin Ranger Stations, and the MacGraw Ranch Learning Center, which can house up to 20 people. NPS government housing units that would be protected by the proposed fuel treatments in the project areas include 43 single-family homes, 18 apartment units and 2 dormitories. The forests east of the park include extensive areas that serve as municipal watersheds for Front Range communities. A decreased risk of intensive fire as a result of fuel reduction treatments could better protect these watersheds.

End of Insert 2

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1g) Comment: Concerned that proposed action will not eliminate need for future fire suppression.

> "Fuel treatment…does not eliminate, and may not even reduce fire suppression costs or effects…The efficacy of fuel treatments in lowering fire suppression efforts is largely unknown…under severe fire weather, thinning treatment has no effect of fire behavior…it is quite possible that there will be no savings as a result of the proposed actions as the costs will be additive: taxpayers will end up subsidizing both the logging operation and the fire suppression efforts…the Park Service cannot fire proof our forests no matter how much money is spent on fuel treatments. By reducing fuels, forest managers may be able to change the probability of a fire burning through an area, but other factors…including climatic events and local weather systems, play a more important role. "

1g) NPS Response: As land managers, the National Park Service would be irresponsible if they did not try to reduce the potential fire intensity and implement treatments to enhance firefighter and public safety. Fires within the suppression zone will continue to be suppressed regardless of whether the area burning has been treated or not. As stated in the environmental assessment, the highest priority of any fire management action is the health and safety of both firefighters and the public and, secondarily, the protection of property. Reducing fuel loads with implementation of the proposed action will make fires easier to control within the treatment areas, lessening the danger to both firefighters and the public. As for the dangers posed by severe weather, it is not reasonable or even desirable in most cases to attempt to reduce hazards in anticipation of worst-case scenario conditions. At some stage, a point of diminishing returns is reached where it is no longer cost-effective to attempt to further reduce risk. The most prudent approach is to prepare for those weather conditions that we will most likely experience. It would not be practical to attempt to prepare for conditions that have a very low probability of occurring. The National Park Service evaluated lands in the park to determine those areas with the highest risk from wildfire and where fuel reduction treatments would be most effective in meeting the objectives of the wildland-urban interface projects. See Table 2a, in response to Mr. Zukoski's second comment, that presents the change in fuel conditions as a result of the treatments.

1h) Comment: The letter expresses a concern that all reasonable alternatives have not been considered.

> "…NEPA requires that the Park Service analyze all reasonable alternatives…The EA does not meet this requirement…One no action alternative and one action alternative cannot suffice as a reasonable range of alternatives."

1h) NPS Response: No other alternatives that would meet the purpose and need of the proposed action were identified. The National Park Service went to great lengths in the public scoping phase of the assessment process, including hosting four public open houses and initiating contact with several of the groups represented in Mr. Zukoski's letter, to solicit input regarding alternatives to meet the purpose and need for the project. As stated in NPS *Director's Order #12, Conservation Planning, Environmental Impact Analysis, and Decision-making Handbook*, Section 5.4 D.1, a no action alternative and one action alternative can suffice as the alternatives evaluated if no other reasonable alternatives exist. The environmental assessment may instead include a discussion of alternatives considered but excluded from further consideration, and the reasons why these were rejected. Four additional alternatives were initially considered, but were excluded from further consideration for the reasons presented in the Alternatives Considered But Rejected section on pages 35-36.

1i) Comment: The letter states that the environmental assessment does not include principles of adaptive management or require monitoring.

> "…the EA requires no scientific process for learning, describes no mechanism for changing management once more is learned, and offers no monitoring plan to ensure that project objectives are being met and desired future conditions are attained…management treatments should be monitored for their effects on population viability, community composition, water quality, fire behavior, noxious weed introduction and spread, and landscape patterns. These metrics must in turn be compared to acceptable standards such as minimum viability population levels and fragmentation indices. The EA must also insure that funding is available for monitoring and include the costs of monitoring in the financial analysis of the project…We strongly recommend that the Park Service incorporate into the project a monitoring and adaptive management process…"

1i) NPS Response: The mitigation measures associated with Alternative B (the preferred alternative) include monitoring for invasive exotic plants. The following statements are added as ***Insert 3*** following the existing bullet referring to invasive plant monitoring on page 33.

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Insert 3

- Permanent plots have been installed in the Emerald Mountain treatment area to monitor vegetation response to fuels treatments. Additional plots will be installed in areas to be treated in the future.

- Prior to any treatment, areas will be surveyed for rare plants.

End of Insert 3

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Fragmentation indices would not be appropriate because the proposed action calls for thinning, not clear-cutting. Because the treated areas would only be thinned and would be adjacent to large expanses of untreated habitat, the proposed action would not substantially alter habitat resulting in reduction of population viability or community composition of any species. Refer to the Wildlife section beginning on page 69.

1j) Comment: Concerned about how project implementation would proceed.

"The EA does not state how the project would be implemented."

1j) NPS Response: The EA states how the proposed action would be implemented on pages 28-35, including mitigation measures to offset or minimize potential adverse effects. The text below is added to the environmental assessment in the Alternative B: Preferred Alternative section on page 28 as ***Insert 4*** to clarify the implementation. Add the text near the end of the second paragraph following the words "…using hand and power tools."

****

Insert 4

In-house NPS staff and contracted labor (e.g., day labor) overseen by the NPS contracting office would implement the treatments. The material generated (no merchantable timber) would be retained as the property of the NPS. No goods for services contracts would be created.

End of Insert 4

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Economic Impacts and Cost-Benefit Analysis Comments

Several comments from the consortium of organizations relating to the economic impacts of the proposed action and the request for a cost-benefit analysis have been grouped below to avoid repetitive responses. Note that a cost-benefit analysis was discussed in the response to Comment 1a.

1k) Comment: The letter expressed concerns about the economic impacts, long-term costs, and the overall economic impact of the proposed action.

"…the Park Service failed to examine the financial impacts of the project…the agency is obligated to analyze and explain the financial costs and benefits to national and local taxpayers from proposed projects…the EA contains no discussion of the expected revenue to be generated from the timber sale, nor the cost subsidized by taxpayers…some analysis of gross and net revenues is needed."

"The costs of future fuel management should…be anticipated and internalized into the financial analysis of current management actions. If the long-term budget commitment for the widespread use of controlled burns is not forthcoming, it would be better not to do any thinning or harvesting (i.e. "do nothing"). The financial analysis in the EA must account for these long-term costs."

"In addition to describing the financial costs and benefits of the project, the Park Service needs to conduct an economic analysis of the project, defined as the overall costs and benefits to society as a whole…the economic analysis included in the EA…assumes only that fire is inevitable and bad under Alternative A and avoidable under Alternative B…the EA must quantitatively estimate the benefits (costs) of conserving (damaging) non-market resources. Since many impacts can now be quantitatively estimated, they should be internalized into the economic analysis evaluating management alternatives as required by NEPA…We urge the Park Service to complete a full economic analysis of the project that looks at both market and non-market benefits and costs and demonstrates how the public will benefit from the Project."

1k) NPS Response: The proposed action would not involve any timber sales and would not generate revenue. This comment, at least in part, appears to be directed at a different document. As stated above in the response to Comment 1a, NPS *Director's Order #12* only mandates a cost-benefit analysis if it would be used in decision making between alternatives. Because decisions about the alternatives were made based on the potential environmental effects and cost was not involved in the decision making, a cost-benefit analysis is not necessary.

No analysis of future management cost will be provided, nor is it necessary. The National Fire Plan is currently committed to funding these projects, but future financial commitments cannot be forecasted because Congress appropriates the budget each fiscal year. Experience has shown that funding has been available, and there have been no indications that there will be significant changes to funding in the future.

The environmental assessment does not state that fire is avoidable under Alternative B. It does contend that gaining control of a fire is more likely after implementation of Alternative B and at a lower risk to firefighters and the public. The statement that the environmental assessment must quantitatively evaluate the benefits (costs) is not supported by NEPA, CEQ, nor NPS guidance (once again, refer to NPS *Director's Order #12*, Section 5.4). No market analysis is provided because the proposed action does not involve marketing timber or any other products.

The following comments do not appear to be relevant to this environmental assessment, however responses are included below.

1l) Comment: The letter stated several concerns that appear to refer to a project or document other than the Rocky Mountain National Park Wildland-Urban Interface Fuels Management Project/Environmental Assessment.

"One of our primary concerns is the Forest Service's apparent failure to adhere to the requirements of the National Environmental Policy Act (NEPA) in preparing its analysis and justification of the USP Project."

"Despite the large area to be logged (27+ square miles) and the large area to be clearcut (nearly 7 square miles), the EA contains very little information concerning the nature or extent of logging."

"If stewardship contracts are used how will "best value" be determined in awarding the contract?"

"The EA fails to disclose the increased fire risk from logging. Logging operations have caused many fires in the past. Some examination of the uncertainties with regards to increased fire risk from implementing the proposed action is needed…The difficulty of implementing the burn portion of the proposed action will undoubtedly result in logged but not burned landscapes with lots of dry fuel left on the ground. In such a landscape, fire danger will be higher…"

1l) NPS Response: The comment letter appears to have this environmental assessment confused with another project. The letter is obviously referring to a document other than Rocky Mountain National Park's WUI environmental assessment as the acreages are inaccurate as well as the means by which we propose to conduct the treatments. The term "logging" infers the removal of trees for commercial use. As the environmental assessment states (on page 23), "[t]he proposed action does not include clearcutting or timber harvest."

There is no mention of "stewardship contracts" or "best value" in the environmental assessment. The comment appears to be directed at a different document. The term "logging" infers the removal of trees for commercial use. No logging operations are proposed. The risk of fire associated with treatment implementation is discountable. The environmental assessment clearly describes burning slash in piles or the physical removal of thinned material offsite. The proposed action would not result in "… lots of dry fuel left on the ground." and would not increase the fire danger.

It should be noted that another letter from the consortium of organizations was received after the comment period closed. This letter apologized for including comments that were intended for another project and stated that the organizations did not believe the proposed action warranted an environmental impact statement.

Comments from Individuals

Comments were also received from the following individuals. The respondent's concern, the National Park Service responses, and, in some cases, clarifications to the environmental assessment are presented below.

2) Comments from Jeff Connor:

2a) Comment: Concerned that treatments may occur in boreal toad habitat.

"…has the USFWS or CDOW designated any of the boreal toad habitat in the park as a critical area?"

2a) NPS Response: The proposed Emerald Mountain treatment area contains potential boreal toad habitat in an area near Glacier Creek. Biological surveys were recently

conducted in this area, but failed to locate boreal toads. Fuel reduction treatments would not likely alter an area's suitability as boreal toad habitat. Regardless, prior to treatment implementation, any areas identified as potential boreal toad habitat would be surveyed for boreal toads. Even if no toads are found, treatments would be implemented during times of the year when potential effects to boreal toads or their habitat would be negligible.

2b) Comment: Concerned that wording in the environmental assessment implies that thinning treatments are reducing wildfire risk throughout the park.

> "…are we really reducing the risk to any significant degree? The language in the EA to me seems to imply it is reducing the risk of any wildfire in the park which (correct me if I am wrong) is not correct."

2b) NPS Response: Yes, wildfire risk would be reduced in selected areas (wildland-urban interface areas). The intention of wildland-urban interface fuel reduction treatments is the *reduction* of risk; we can never *eliminate* the risk of fire altogether and we are not making any claims that these treatments would remove that risk.

2c) Comment: Brings up the point that wording in the environmental assessment indicates that no thinning would occur under Alternative A although treatments are currently underway.

> "…there has been and will continue to be mechanical thinning and prescribed fire in some areas whether or not Alternative B is selected. Right?"

2c) NPS Response: Yes, thinning treatments have commenced and will continue in limited areas. These treatments are not associated with this wildland-urban interface project. The areas currently being treated are addressed in the 1992 Fire Management Plan and NEPA compliance was provided in the plan's environmental assessment.

2d) Comment: Brings up the point that the use of primitive tools was considered for use in recommended wilderness even though this option is not specifically mentioned in the environmental assessment. Suggests that the use of primitive tools in recommended wilderness be included as an alternative in the next Fire Management Plan.

> "…you did not list as an alternative considered but rejected…using primitive tools to do mechanical thinning in recommended wilderness. This was discussed so it seems it should have been at least identified as an alternative considered."

2d) NPS Response: The use of primitive tools was considered as an option in recommended wilderness. However, because any areas in designated or recommended wilderness were removed from consideration as potential treatment areas, the use of primitive tools was no longer an issue in the current environmental assessment.

2e) Comment: Mentions the need for discussion of how much of the park boundary is considered high risk and how much would actually be treated.

> "…the EA…perhaps should have had a discussion about how much of the park boundary is considered high risk and how much of it we will be treating. Most of the high risk areas of the park will not be treated because it falls within recommended wilderness, right?"

2e) NPS Response: Areas of high wildland fire risk may exist within designated or recommended wilderness. However, due to concerns brought up during the public scoping

process, all areas in designated or recommended wilderness were removed from consideration as potential treatment areas in the current wildland-urban interface project. An analysis of strategic fuels treatments along the park boundary in these areas will be revisited during the revision of Rocky Mountain National Park's Fire Management Plan, scheduled for fiscal year 2004.

2f) Comment: Asks about the impacts of thinning on smoke emissions.

> "…will Alternative B actually reduce smoke emissions better than Alternative A?…what does (sic) fire behavior fuel models predict in the thinned areas under different scenarios for the treatment areas? Does it actually predict a reduction in smoke when a fire starts burning in a treated area or a fire burns into one under a typical scenario?"

2f) NPS Response: All other things being equal, a fire burning in an area with less available fuel would produce less smoke than one in an area with more available fuel. Because of the higher temperatures in a burn pile, material would burn more completely and efficiently and be less prone to smolder (i.e., producing smoke over a long period of time) than would that same material burning in a wildfire in the same landscape.

2g) Comment: Suggests creation of safety zones on Emerald Mountain.

> "Perhaps in the EA you should have considered establishing some safety zones in a few areas by clear cutting lodgepole up there on Emerald Mountain."

2g) NPS Response: Several locations within the vicinity of the Emerald Mountain treatment area currently exist that could be utilized as safety zones. These areas include the Glacier Basin campground, the Visitor Transportation System (VTS) parking area, and portions of the YMCA of the Rockies property.

2h) Comment: Concerned about the potential adverse effects of pile burning on soil microbes.

> "…if 14% of 3670 acres is occupied by wood piles…that will be about 514 acres where a hot fire will kill soil microbes…the statement in the EA about an area will be quite small is not in my opinion and (sic) accurate statement. The cumulative effect would not be negligible, but moderate depending on how many wood piles there are."

2h) NPS Response: Debris generated by treatments would be physically moved offsite rather than burned in place to the greatest extent possible. This would greatly reduce the potential effects of pile burning on soil organisms. Where pile burning does occur, high soil temperatures may result in short-term minor adverse effects on soil microorganisms. Although data on the effects of fire on soil biota is sparse, soil microorganism populations tend to rebound with the re-establishment of vegetation. Given the dispersed nature of the piles, each pile burn area would be surrounded by unburned soils, which would provide a source from which microorganisms can reestablish themselves. Reestablishment should be accelerated by the post-burn soil scarification and rehabilitation efforts included as part of the proposed action. Therefore, the residual impact on soil microorganisms should be negligible over the long term.

2i) Comment: Concerned about the potential adverse effects of pile burning on small mammals.

> "…wood piles that have been sitting around for a while can become wildlife habitat for small mammals such as mice and rabbits…there could be some minor impacts including death to some small mammals when a wood pile is finally burned."

2i) NPS Response: Given the amount of human activity and related commotion associated with the pile burning operations, it is likely that any small mammals residing in the piles would have ample opportunity to vacate the area prior to pile ignition. Additionally, the material in a pile is not ignited in a manner that would trap small mammals within the interior of the pile. As a pile is lit from one side, any animals present would be able to escape from the opposite side of the pile.

2j) Comment: Asks if thinning would reduce possibility of closing the park due to wildfire.

> "…is the fuel thinning actually going to lessen the chance that the park or a portion of the park would be closed or the landscape charred?"

2j) NPS Response: Although the size of the area under consideration for treatment is small relative to the overall size of the park, reducing the hazard along the park boundary would lessen the possibility of fire spread from the park onto private property and vice versa. Breaking up the continuity of fuels in even a small area would therefore reduce the overall hazard of high-intensity fire behavior on both sides of the park boundary. In the event that a fire within or adjacent to the park posed a threat to public safety, temporary, localized closures could occur. These closures could be implemented regardless whether fuels treatments had been completed in an area or not.

2k) Comment: Asks if the visual impacts of a wildfire would adversely affect a visitor's experience.

> "…is a charred landscape actually altering in a negative way a visitor's park experience?"

2k) NPS Response: An individual's perception of a burned landscape is highly subjective, reflecting a multitude of factors. The environmental assessment's analysis of the impacts of wildfire identifies adverse impacts as a result of closures and/or restricted use in both Alternatives A and B. The respondent correctly states that some parts of the public would view a burned landscape from a beneficial perspective. The environmental assessment includes this perspective in the analysis of Alternative B. However, the environmental assessment should include a similar "eye of the beholder" balance of both adverse and beneficial effects perspectives for the no action alternative (Alternative A) as well.

3) Comments from Dr. William Baker:

3a) Comment: Suggests that the proposed action may not be effective in reducing risk (at least in lodgepole and mixed conifer).

> "The proposed action is well-meaning, but may be ineffective, as the characteristics of past fires in lodgepole pine and mixed conifer forests do not suggest that fuel loads or tree density are very important to fire behavior. Fires in these forests are most likely to burn under the periodic extreme conditions (drought, strong winds) that characterize the Front Range climate…A central finding of recent research in the Front Range and nearby…is that past fires in Front Range forests appear to

be strongly affected by climate. In particular, lodgepole and mixed conifer fires occur predominantly during regional drought episodes…During the years when fires may burn in these forests, it is unlikely that the spacing of trees will have much, if any influence on the intensity of fires, as fire weather conditions may be extreme."

3a) NPS Response: The proposed action is not intended to eliminate the risk of fire under unusual or extreme weather conditions. Raising the height of the canopy base, reducing surface fuel loading, and breaking up fuel continuity would lower fireline intensities and reduce torching potential, making future wildfires easier to control under typical weather conditions. Under extreme weather conditions where it would not be feasible to attack a fire on the ground, opening the canopy would allow a greater amount of retardant to reach the forest floor should aerial fire retardant drops be employed. In the long-term, strengthening the ability to control wildfires at the park boundary would allow greater opportunity to use fire (both natural and prescribed) within the park's interior.

3b) Comment: Concerned about creation of unnatural stand structures.

"…thinning these forests over a few thousand acres will probably produce forest structures that are unnatural and somewhat unprecedented historically, as lodgepole pine forests, in particular, were seldom subject to surface fires that would have naturally thinned the trees. While these forests may sometimes appear to be dense, that is probably their natural condition."

3b) NPS Response: The intention of the proposed action is hazard fuel reduction, not habitat restoration. Completion of the proposed hazard fuel reduction treatments would provide increased protection to public and private assets proximal to the treated areas. Consequently, the park would have more opportunities and greater flexibility to apply prescribed fire and/or manage wildland fire for ecological benefit within the interior of the park. Although low intensity surface fire is uncommon in subalpine forest types, it has been documented in the Rocky Mountains (Skinner and Laven 1983, Peet 1988, Sibold 2001).

3c) Comment: Suggests the use of more recent fire history information.

"The EA relies on Skinner and Laven for fire history information, but recent theses and publications on fire history in the Park and nearby may be relevant to the assessment."

3c) NPS Response: Although the reference cited in the environmental assessment is somewhat dated, the fire return intervals presented are generally consistent with more recent research (e.g., Goldblum and Veblen 1992, Hadley 1994, Veblen et al. 1994, Brown et al. 1999, Veblen et al. 2000, Sibold 2001).

3d) Comment: Suggests the use of more concentrated treatment around structures.

"Recent research by Jack Cohen, a scientist with the USFS Missoula Fire Lab suggests that thinning that extends beyond about 100-200 feet from a structure or building probably has little if any influence on the behavior of the fire or the possibility that the structure will burn…Rocky Mountain National Park could most effectively protect structures and resources by thinning just in the 100-200 feet around important areas"

3d) NPS Response: Two factors are critical in determining a structure's ignition potential: 1) the availability of fuels adjacent to the structure, and 2) the potential for exposure to aerially transported firebrands. Reducing fuels within 100-200 feet of a structure removes the potential for ignition from direct flame impingement, but does little to remove the risk of burning embers lofted downwind from a fire. An examination of the home destruction associated with the Cerro Grande fire conducted by Jack Cohen determined that structure ignition from firebrands was the major cause of structure loss.

Generally speaking, the greater the intensity at which a fire burns, the greater the potential for burning material to be lofted downwind. Firebrands are commonly produced during crown fires. The intent of the proposed treatments is to lower fireline intensities and reduce the torching potential of future wildfires thereby lessening the possibility of fire spread from the park onto private property and vice versa. By reducing the intensity of future wildfires along the park's eastern boundary, the treatments would also reduce the risks to public and private assets proximal to the treated areas by reducing firebrand production.

Rocky Mountain National Park encourages adjacent landowners to take action to reduce the risk of fire to structures on their properties and has several cooperative cross-ownership fuels treatment efforts underway. Additionally, the park has supported community FIREWISE educational efforts by hosting the Student Conservation Association's Fire Education Corps. This group offers wildland-urban interface homeowners information and services geared toward creating defensible space around their properties and reducing their risks from wildland fire.

4) Comments from Cleveland M. McCarty:

4a) Comment: Concerned about exact project boundaries in Wild Basin vicinity.

"A thinning of the forest in (sic) an important preventative, but on my land I need to know the exact perimeters you have in mind."

4a) NPS Response: Private property would not be treated.

4b) Comment: It appears that he is under the impression that his land would be treated.

"Since my home is in Boulder a supply of harvest would be expected."

4b) NPS Response: Mitigation treatment on private property is the responsibility of the land owner. Contact the Colorado State Forest Service office in Longmont at 303-823-5774 for information regarding private land mitigation assistance.

5) Comments from Alice B. Hall:

5a) Comment: Concerned that inholders were not properly notified.

"Why were all these groups contacted when the persons who actually own property within the park were not?"

5a) NPS Response: Media releases were issued and public meetings were held during November 2001 to discuss projects with all interested persons. All potentially affected inholders were notified by mail about the project. Our records indicate that the respondent did receive written notification about the project.

5b) Comment: Wishes to know exact width of treatment area in Wild Basin.

"Exactly how wide is the area which comprises the treatment area in Wild Basin?"

5b) NPS Response: Refer to the map on page 13 of the environmental assessment.

5c) Comment: Wishes to know why hillsides are not included in treatment area.

"Why is this area targeted and the sides of the hills are not?"

5d) Comment: Concerned that level of thinning is "too severe".

"The thinning seems to be too severe. Is this because it only covers the areas most impacted by humans?"

5e) Comment: Suggests that removal of dead and down timber over a larger area would be more effective.

"It would appear that it would be more useful to remove the dead and down timber on a larger scale than to do such a zealous job on a relatively small area."

5c, d, e) NPS Response: The proposed project area is limited to areas outside designated or recommended wilderness, therefore expansion of treatment area is not possible.

5f) Comment: Wishes to know if private property is included and why privately owned structures are not mentioned.

"What about private property? Is it included or excluded? Under 'standing structures' there is no mention made of the other structures in Wild Basin. Is this because they are privately owned?

5f) NPS Response: Private property would not be treated. Please contact the Colorado State Forest Service in Longmont at 303-823-5774 for information regarding private land mitigation assistance.

5g) Comment: Suggests further evaluation and revision of Preferred Alternative prior to implementation.

"While I believe that something must be done, I urge further evaluation and some revision be done to Alternative B before it is implemented."

5g) NPS Response: Although the respondent urges further evaluation prior to implementation of project, she does not offer any suggestions to refine the plan.

6) Comments from Gayle and Howard Harms:

6a) Comment: Concerned that the winds in Wild Basin would make prescribed fire a particularly dangerous treatment option.

"…the weather, especially the wind, is more fickle at the mouth of Wild Basin (at the foot of the Copeland Moraine) than you can believe unless you experience it…this would make any prescribed burns on the South side of Copeland Moraine (the mouth of Wild Basin side) foolish and dangerous beyond description."

6a) NPS Response: Winds are carefully monitored as part of any prescribed fire activity, including burning slash piles. If winds were not within predetermined parameters, ignition would not occur or suppression action would be initiated.

6b) Comment: Suggests immediate removal of standing dead and downed trees.

"PLEASE REMOVE THE DEAD AND DRIED FIR TREES ON THE COPELAND MORAINE…PLEASE REMOVE THE PONDEROSA PINES THAT HAVE DIED OF BEETLE INFESTATION DURING THE PAST THREE YEARS…REMOVE THE PONDEROSAS CURRENTLY INFESTED."

6b) NPS Response: Removal of selected dead trees would occur within the project area as identified in the treatment objectives.

6c) Comment: Particularly apprehensive about the use of fire in the Wild Basin area.

"Remove logs by dragging to the road and by hauling out…UNDER NO CIRCUMSTANCES SHOULD THE DOWNED TIMBER BE BURNED ON SITE."

6c) NPS Response: If burning of slash piles is deemed necessary, all fire management procedures necessary to maintain full control of the fire would be implemented.

6d) Comment: Would like to see treatment commence in Copeland Moraine area prior to any other areas.

"MAKE THE COPELAND MORAINE PROJECT AREA ONE THE TOP PRIORITIES AND THE FIRST ONE TO COMPLETE. The amount of dead, dry, standing fuel merits your urgent attention."

6d) NPS Response: The Copeland Moraine treatment area, as described in the environmental assessment and identified on the included maps (see pages 6-13) , includes an area adjacent to the Wild Basin Road. The primary feature commonly known as Copeland Moraine is not within the project area.

7) Comments from Dudley Smith:

7a) Comment: Concerned about the timing and duration of treatment.

"I am curious about the timetable for such a project, not only in years but seasons within the years."

7a) NPS Response: Contact the Fire Management Office at Rocky Mountain National Park (970 586-1287) for details regarding how potentially affected neighbors would be contacted when treatments are to be implemented.

7b) Comment: Concerned about impact of treatment on access to private property.

"I would like to know if access to our cabin via High Drive will be impacted."

7b) NPS Response: Access to private lands would not be impacted by this project.

7c) Comment: Wishes to know if private property would be treated.

"…will the growth on our property be inclued (sic) or excluded in your plan?"

7c) NPS Response: Mitigation treatment on private property is the responsibility of the land owner. Contact the Colorado State Forest Service office in Longmont at 303-823-5774 for information regarding private land mitigation assistance.

7d) Comment: Concerned about impacts of treatment on private water supply.

"…am I correct to assume our water supply from the national park will not be affected by the projects?"

7d) NPS Response: No measurable impacts in water quality or quantity are anticipated on the High Drive water system from the proposed action.

7e) Comment: Supportive of slash disposal via local firewood sales.

"…I support the idea of selling firewood in the Estes area.

7e) NPS Response: Some firewood would be sold through public bid process.

8) Comments from Joanne Ball:

8a) Comment: Mentions debris left near her property from fuels treatments conducted in 1996.

"In 1996, one of your crews was at work on the boundaries on the Moraine and there are still wigwam piles of logs and debris left from that time."

8a) NPS Response: No known slash piles are currently present on NPS lands in the area described. We believe the "wigwam piles" described in the comment are located on USFS land, not on NPS property.

8b) Comment: Concerned about the possibility of prescribed fire escape.

"…we are sceptical (sic) about the ability of actually 'controlling' a controlled burn…"

8b) NPS Response: All necessary controls and monitoring procedures would be implemented in the event that prescribed burning would be used.

8c) Comment: Concerned about health effects of smoke.

"There is also the ensuing smoke, which causes me acute respiratory distress."

8c) NPS Response: Burning slash piles under favorable weather conditions would generate much less smoke than an uncontrolled wildfire.

8d) Comment: Wishes to be kept informed on status of plan.

"I wish to be notified of any developments in you (sic) plan."

8d) NPS Response: Ms. Ball has been included on the prescribed fire notification list and will be contacted when Rocky Mountain National Park is conducting any burning.

8e) Comment: Suggests increased spacing between piles in the future.

"…any new piles of logs and debris on the crest of the moraine should be piled farther apart as they are stacked westward."

8e) NPS Response: If it is necessary to stack piles of slash for burning, the piles would be placed in the least sensitive (from a resource perspective) and safest (with regard to fire risk) locations.

8f) Comment: Asks about the potential use of helicopters to remove thinned material.

> "Any alternatives such as helicopter removal of large sized timber?"

8f) NPS Response: This project does not include any planned use of helicopters to remove materials.

8g) Comment: Mentions lack of roads or water to aid in fire suppression.

> "Another thing for your planners to bear in mind is that there is no road access to the moraine and no sources of water with which to fight a runaway fire."

8g) NPS Response: The National Park Service is aware of the limitations on fire suppression capabilities in the treatment areas. These limitations add to the list of reasons why fuel reduction treatments would reduce the overall risk from uncontrolled wildfire.

9) Comments from the Board of Larimer County Commissioners:

9a) Comment: Generally supportive of Alternative B.

9a) NPS Response: The board's support is acknowledged.

9b) Comment: Concerned about creation of new roads.

> "Minimize hauling of removed material for burning and burn on site to prevent unnecessary road development.

9b) NPS Response: This plan does not include the creation of any new roads.

9c) Comment: Concerned about impact to wilderness.

> "Management areas should be scrutinized more thoroughly to insure wilderness values are protected."

9c) NPS Response: None of the proposed project areas are within designated or recommended wilderness. Ecosystem and resource values would be protected in accordance with the Backcountry/Wilderness Management Plan and Environmental Assessment dated July 2001.

9d) Comment: Concerned that taxpayers would foot the bill to protect a few property owners adjacent to the park.

> "Proposed (Alternative B) action is motivated only to protect private residential development at considerable cost to the taxpayer."

9d) NPS Response: Congress authorized National Fire Plan funding to increase the protection of communities and municipal watersheds through reduction of hazardous fuels. Under the proposal, the National Park Service would work closely with state and county governments, as well as communities and private citizens, to ensure that fuel treatments are properly planned and implemented across jurisdictional boundaries.

10) Comments from Patricia E. Downing and Alice Gray:

Both respondents were supportive of the proposed action and urged implementation of Alternative B. Their support is acknowledged.

Errata References

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